

CLAIMS:

1. A limb for a breathing circuit comprising:
 - a very thin walled conduit having a first end and a second end and a breathing gases pathway therebetween,
 - a first connector fixed to said first end of said conduit,
 - a second connector fixed to said second end of said conduit, and
 - an elongate reinforcing member lying freely within said very thin walled conduit along a non-tortuous path from one end of said conduit to the other end of said conduit, and connected with said first connector and said second connector.
2. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member has a cross sectional area, measured from the outer perimeter, less than 10% of the cross sectional area of the bore of said breathing conduit.
3. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member is hollow, and said hollow elongate reinforcing member is blind terminated at each end by said first connector and said second connector.
4. A limb for a breathing circuit as claimed in claim 3, wherein said hollow elongate reinforcing member is too small to be a conduit for gases delivery to a patient, but large enough to be used as a pressure measurement or feedback conduit.
5. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member has a solid, substantially circular cross section, and two ends.
6. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member includes a positive temperature coefficient heating element.

7. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member includes a resistance heating element.
8. A limb for a breathing circuit as claimed in claim 1, wherein the length of said elongate reinforcing member is between 100.5% and 105% of the length of said conduit.
9. A limb for a breathing circuit as claimed in claim 1, wherein said connectors have a first end suitable for making connection with auxiliary equipment and a second end for making connection with a breathing conduit, and
an annular shoulder between said first end and said second end,
said second end extending along an axis and having a substantially circular cross section, and
said second end having at least one protrusion on an outer surface for interlocking engagement with a helical rib of a breathing conduit.
10. A limb for a breathing circuit as claimed in claim 9, wherein said protrusion is an external thread having a pitch suitable for engagement with said helical rib of a breathing conduit.
11. A limb for a breathing circuit as claimed in claim 9, wherein said shoulder portion has an annular recess for receiving a securing collar having an extrusion axis.
12. A limb for a breathing circuit as claimed in claim 9, wherein said second end of said end connector has a recess substantially parallel with said axis for receiving said elongate reinforcing member.

13. A limb for a breathing circuit as claimed in claim 11, wherein said securing collar has a recess substantially parallel with said extrusion axis for receiving said elongate reinforcing member.
14. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member is resilient and does not plastically deform in use, under normal flexing and bending of said limb.
15. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member has a cross sectional area between 3 mm² and 12.5 mm².
16. A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member has a minimum bending stiffness between 693 N.mm² and 11096 N.mm².
17. A limb for a breathing circuit as claimed in claim 1, further comprising:
a braided sheath surrounding said conduit and being fixed at and around one end to said first connector and at and around its other end to said second connector.
18. A limb for a breathing circuit as claimed in claim 17, wherein said sheath is a braided tube braided from polyethylene terephthalate monofilaments.
19. A method for manufacturing a limb for a breathing circuit comprising:
providing a very thin walled breathing conduit having a first end and a second end,
locating an elongate reinforcing member having a first and a second end, lying freely within said conduit, along a non-tortuous path from one end of said conduit to the other end of said conduit,
fixing a first end connector with a first end of said breathing conduit, and a first end of said elongate reinforcing member, and

fixing a second end connector with said second end of said conduit and said second end of said elongate reinforcing member.

20. A method for manufacturing a limb for a breathing circuit as claimed in claim 19, further comprising:

locating a reinforcing mesh having a first and a second end, over the outside of said breathing conduit,

fixing a first end connector with a first end of said breathing conduit, and a first end of said reinforcing mesh, and

fixing a second end connector with said second end of said conduit and said second end of said reinforcing mesh.

21. A method for manufacturing a limb for a breathing circuit comprising:

providing a very thin walled breathing conduit having a first end and a second end,

locating a reinforcing mesh having a first and a second end, over the outside of said breathing conduit,

fixing a first end connector with a first end of said breathing conduit, and a first end of said reinforcing mesh, and

fixing a second end connector with said second end of said conduit and said second end of said reinforcing mesh.

22. A limb for a breathing circuit comprising:

a very thin walled conduit having a first end and a second end,

a first connector fixed to said first end of said conduit,

a second connector fixed to a second end of said conduit, and

a braided sheath surrounding said conduit and being fixed at and around one end to said first connector and at and around its other end to said second connector.

23. A limb for a breathing circuit as claimed in claim 22, wherein said sheath is a braided tube braided from polyethylene terephthalate monofilaments.

24. A limb for a breathing circuit as claimed in claim 22, wherein said conduit includes a helical reinforcing bead.